

Robots and Minds



Lycan

What is Intelligent Behavior?

- We assume we humans have it.
 - But what is intelligent behavior?
 - What is intelligence?

Intelligence

- “I suggest that intelligence of the sort I am talking about is a kind of flexibility, a responsiveness to contingencies. A dull or stupid machine must have just the right kind of raw materials presented to it in just the right way, or it is useless....” (318)
 - Unlike can openers, humans are capable of dealing with unknown contingencies, of planning and anticipating without knowing exactly what they'll see in the future.
 - Humans pursue their goals and monitor and modify their progress as they go

Intelligence and Information

- Intelligent creatures are both receptive to and monitor information
- Intelligent creatures are “information-sensitive creatures”
 - Human beings are information-sensitive creatures in a very sophisticated way
- In some respects, how digital computers process information is similar to how humans process information

Computers and Intelligence

- Limitations of computers
 1. Computers have to be fed information
 - At the very least, computers have to be plugged into an electrical outlet
 2. Computers have to be programmed
 - The effectiveness of the computer depends upon the effectiveness of the program the computer runs
- “The computer has intelligence in the sense I have defined, but has no judgment, since it has no goals and purposes of its own and no internal sense of appropriateness, relevance, or proportion.” (319)

Questions Raised By the Comparison of Computers to Humans

- "(A) “Will a computer ever be able to do X?” where X is something that intelligent humans can do.
- “(B) “Given that a computer can or could do X, have we any reason to think that it does X in the same way that humans do X?”
- “(C) “Given that some futuristic supercomputer were able to do X, Y, Z, ..., for some arbitrarily large range and variety of human activities, would that show that the computer had property P?” where P is some feature held to be centrally, vitally characteristic of human minds, such as thought, consciousness, feeling, sensation, emotion, creativity, or freedom of the will.” (319)

Answers to the Questions

- Lycan thinks that the answers to questions of type A and type B are empirical
 - Type A questions are really just questions about what machines are capable of doing
 - Type B questions are in the domain of cognitive science and psychology
- Type C questions are fundamentally philosophical
 - Lycan intends to address the type C question by assuming that we do have answers to type A and B questions

Harry

- Harry: Lycan asks us to imagine a sophisticated computer in humanoid form which is capable of doing everything humans can do: it can play golf, play music, write poetry, make love, do philosophy, etc.
- Is Harry a person? Is Harry conscious? Does Harry have a mind?
 - If we can't help treating Harry is a person, then is Harry a person? Is Harry conscious?
- How do we judge that other humanoids are persons?
 - What are the criteria for determining that humanoids are persons?
 - It seems that the criteria one uses to judge Harry's behavior is the same criteria one uses to judge any other humanoid's behavior

What Is The Difference Between You And Harry?

- Harry acts just like any other humanoid person
- The only difference between you and Harry is...
 - (i) Origin: Harry was created in a laboratory
 - (ii) Makeup: Harry's chemical composition is silicon and not carbon
- So is there a difference?

Human Chauvinism

- Human Chauvinism: human chauvinism holds that only humans are persons; that is, that only beings with the right origins and the right chemical composition can be a person
- “To exclude him from our community for either or both of those reasons seems to me a clear case of racial or ethnic prejudice (literally) and nothing more. I see no obvious way in which either the creature's origin or its subneuroanatomical chemical composition should matter to its psychological processes or any aspect of its mentality.” (320)

Henrietta

- Henrietta is a normal, human who slowly has had parts of her body replaced with silicon replacements
 - The surgeons are so successful that there is no apparent difference between Henrietta after surgery and Henrietta before surgery
 - But, after surgery Henrietta no longer has the right chemical composition
 - Did Henrietta lose consciousness during one or more of the surgeries?
 - If so, when?
 - It is hard to argue that there is some privileged part of the neural system the replacement of which changes one's consciousness

Henry and Henrietta

- If Henry and Henrietta have mental lives like ours, then it is hard to argue that they don't have moral lives like ours
- And, if they have moral lives like ours, then they have moral rights and privileges just like us
 - We don't discriminate against people who don't have all of their original parts, so why should we discriminate against those who have parts with different origins?

Today's Challenge

- How do we treat machines that are capable of receiving information from the environment, processing that information, and acting upon that information?
 - In effect, we have machines like this today—some are more sophisticated than others
- Today, there is a wide range of information-processing machines from the simplest computer to the most brilliant human being
- Where do we draw the “personhood” line between simple information-processing machines and complex, humanoid information-processing machines (us)?

Moral Rights

- “What moral rights would an intermediate or marginally intelligent machine have? Adolescent machines of this sort will confront us much sooner than will any good human simulators, for they are easier to design and construct; more to the moral point, they will be designed mainly as labor-saving devices, as servants who will work for free, and servants of this kind are (literally) made to be exploited. If they are intelligent to any degree, we should have qualms in proportion.” (321)
 - Lycan thinks a similar question is raised in the animal-rights debate

Lycan's Computational Morality Argument

1. Intelligence requires the processing of information.
 2. Human beings process information.
 3. Human beings have intelligence.
 4. Human beings are moral beings.
 5. We attribute intelligence to other human beings because they have the appropriate behavioral repertoire to novel situations.
 6. We attribute morality to other human beings because they are intelligent beings.
 7. Whether a being has moral status is independent of that being's origins and physical makeup.
 8. We are not justified in withholding morality or moral claims for those information-processing beings whose origins and physical makeup differs from our own.
 9. Hypothetically, sophisticated computers will demonstrate the same type of information-processing behavior as humans.
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10. Therefore, sophisticated computers will have the same moral status as human beings.

Counterargument to Lycan

1. If computers were like humans, then computers would have the capacity to make choices.
 2. Computers do not have the capacity to make choices.
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3. Computers are not like humans.
- This argument rests on assumptions about what free will is.

What Is Free Will?

- What does it mean to have free will?
- Are “free” actions uncaused? Are any actions uncaused?
 - If one acts of one's own free will, then isn't one the cause of one's own action?
 - If I am the cause of my own actions and that is what makes me morally responsible for my behavior, then why isn't the computer, which is the cause of its own actions, morally responsible for its behavior?

Predictability

- Counterargument: computers are predictable, humans are not
 - Is it really true that computers are predictable and humans aren't?
 - Unpredictability can arise from (i) physical defects, (ii) bugs in the software, (iii) random, quantum occurrences, or (iv) learning and analogical processing.
 - Also, many goals are described ambiguously or relativistically, and how those goals are interpreted will vary and possibly lead to unpredictable behaviors

Qualitative States

- Do computers, or can computers, have qualitative states?
 - Lycan does not assume that the answer is "No"
 - Why assume that qualia are essential to mentality?
 - If functionalism is true, then quality are not essential to mentality.
 - “What matters to mentality is not the stuff of which one is made, but the complex way in which that stuff is organized.” (322)